

RAINY RIVER BASIN--Continued

05133500 RAINY RIVER AT MANITOU RAPIDS, MN
(International Gaging Station)

LOCATION.--Lat 48°38'04", long 93°54'47", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T.160 N., R.26 W., Koochiching County, Hydrologic Unit 09030004, on left bank at Manitou Rapids, 4 mi west of Indus.

DRAINAGE AREA.--19,400 mi² (approximately).

PERIOD OF RECORD.--July 1928 to current year. Monthly discharge only for some periods, published in WSP 1308. October 1911 to October 1924 (gage heights only) at site near Birchdale in files of U.S. Army Corps of Engineers. Published as "near Birchdale" 1932-34.

GAGE.--Water-stage recorder. Datum of gage is 1,062.48 ft above sea level (NGVD of 1929). Prior to Nov. 10, 1934, nonrecording gage at site near Birchdale, 7 mi. downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation caused by power plants at International Falls. Some regulation at Rainy and Namakan Lakes affects low and medium flows.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6920	14200	15100	e15000	e11900	e10000	5510	8170	7540	50200	16500	8300
2	9100	14400	15400	e15000	e11900	e9800	7050	8130	7650	47800	16200	8510
3	9140	15100	15400	e15000	e11700	e8200	7810	8140	7470	45900	13700	8450
4	9120	14800	15300	e15300	e11700	e8200	6630	7870	7170	44300	11200	9330
5	9040	14700	15300	e15200	e11700	e9500	5710	7910	6890	46900	10500	9160
6	8590	14200	15500	e15000	e12000	e9800	5580	7890	6600	48500	10200	8900
7	6180	14100	e15000	e14800	e12000	e9800	5420	7940	6310	46200	8980	8960
8	5420	14200	e14600	e14700	e12000	e9400	5490	8050	6190	44800	8450	9040
9	6370	14700	e14500	e14600	e11800	e8800	5500	8300	6190	44000	12300	8870
10	7190	15000	e14500	e14300	e11600	e7200	5660	9100	15700	43400	12300	8810
11	9800	15000	e16500	e14000	e11300	e7800	5970	9770	35900	43300	10200	8460
12	11100	15000	e17900	e13700	e11100	e8800	6440	10100	46100	43100	9010	7170
13	12600	13900	e17800	e13600	e11000	e9400	7200	10100	47000	42300	8460	6430
14	14600	14000	e17700	e13500	e10900	e9600	8110	10100	49400	41300	8230	5860
15	15700	14200	e17000	e12600	e10700	e9700	8980	9970	49300	40400	8050	5810
16	16000	14200	e16300	e12600	e10600	e9600	10100	9840	48000	39300	9090	5690
17	16100	13900	e16000	e12700	e10400	e8700	13200	9620	46600	38500	10600	5630
18	15900	13200	e16000	e12500	e10300	e8700	12900	9230	45300	37700	11400	5530
19	15800	13100	e15700	e12200	e10600	e9800	11900	8850	45100	36800	11600	5460
20	16100	13400	e15400	e12000	e10700	e9700	11800	8440	46500	36000	11600	5470
21	16200	13200	e15000	e12000	e10600	e9400	11600	8050	47600	35300	11400	5410
22	16100	13300	e14700	e12100	e10500	e9600	11300	7710	48900	34300	11000	5460
23	15100	13300	e15300	e12200	e10400	e10000	10700	7370	52100	33600	10200	5430
24	14600	13100	e15400	e12100	e10000	e9300	10100	7310	55400	32800	9420	5430
25	14500	12300	e15800	e12000	e9800	e9000	9700	7190	60200	32000	9010	5350
26	14700	12500	e16500	e12000	e9700	e10100	9540	7060	63100	31100	8760	5330
27	14300	14100	e16500	e11800	e10100	e9700	9090	7030	63100	30000	8290	5300
28	14400	15000	e16100	e11700	e10200	e9400	8680	6850	60600	28400	7970	5310
29	14600	14800	e14800	e11800	---	9080	8340	6730	56900	26300	7880	5290
30	14600	14800	e14800	e11900	---	6460	8280	6820	53300	22600	7840	5230
31	14200	---	e15000	e11900	---	5570	---	7210	---	18200	7920	---
TOTAL	384070	421700	486800	409800	307200	280110	254290	256850	1098110	1185300	318260	203380
MEAN	12390	14060	15700	13220	10970	9036	8476	8285	36600	38240	10270	6779
MAX	16200	15100	17900	15300	12000	10100	13200	10100	63100	50200	16500	9330
MIN	5420	12300	14500	11700	9700	5570	5420	6730	6190	18200	7840	5230
AC-FT	761800	836400	965600	812800	609300	555600	504400	509500	2178000	2351000	631300	403400
CFSM	0.64	0.72	0.81	0.68	0.57	0.47	0.44	0.43	1.89	1.97	0.53	0.35
IN.	0.74	0.81	0.93	0.79	0.59	0.54	0.49	0.49	2.11	2.27	0.61	0.39

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11890	11500	10270	9194	8741	8954	15580	19740	20330	16950	11690	11120
MAX	42410	37280	27790	18430	17240	16640	38100	52880	49480	47970	33700	30620
(WY)	1942	1972	1972	1972	1969	1945	1966	1950	1950	1950	1944	1988
MIN	4728	3796	3190	2900	3129	2926	4378	4106	3676	3483	3422	3746
(WY)	1981	1977	1930	1931	1931	1931	1977	1977	1980	1980	1980	1998

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1929 - 2002
ANNUAL TOTAL	7606430	5605870	
ANNUAL MEAN	20840	15360	13010
HIGHEST ANNUAL MEAN			23260
LOWEST ANNUAL MEAN			4470
HIGHEST DAILY MEAN	60100	May 25	63100
LOWEST DAILY MEAN	5400	Feb 19	5230a
ANNUAL SEVEN-DAY MINIMUM	6140	Apr 1	5320
MAXIMUM PEAK FLOW			63800
MAXIMUM PEAK STAGE			19.33
ANNUAL RUNOFF (AC-FT)	15090000	11120000	9427000
ANNUAL RUNOFF (CFMS)	1.07	0.79	0.67
ANNUAL RUNOFF (INCHES)	14.59	10.75	9.11
10 PERCENT EXCEEDS	41900	38000	25700
50 PERCENT EXCEEDS	15000	11600	10300
90 PERCENT EXCEEDS	8000	6620	5060

a Falling stage.
e Estimated.

